Networking your world

NM-1000E

GIGA Media Converter

USER'S MANUAL

Http://www.netsys.com.tw

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Statement of Conditions

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Maximum signal rate derived from IEEE Standard specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Netsys does not warrant that the hardware will work properly in all environments and applications, and makes no warranty and representation, either implied or expressed, with respect to the quality, performance, merchantability, or fitness for a particular purpose. Make sure you follow in line with the environmental conditions to use this product.

Foreword

The Netsys' NM-1000E is a converter that translates transmission signals from a twisted-pair 1000BASE-TX cable (UTP) to 1000BASE-FX fiber optic cable. The converter automatically adapts to the highest level of performance supported by the device connected to the Ethernet port. When the device is a switch or a workstation that supports full-duplex, the converter adapts to the full-duplex mode and provides an effective 2000Mbps bandwidth. When the device connected is a hub or a workstation that supports only half-duplex, the converter adapts to the half-duplex mode and provides the nominal 1000Mbps bandwidth.

NM-1000E supports conversion between 1000Base-T and 1000Base-LX / SX network, which are SC / SFP / WDM connectors with single-mode or multi-mode media as required. NM-1000E also supports jumbo frames pass through which is perfect for video streaming application.

With high performance of data transmission and easy installation, the NM-1000E can build the ISP network solution of FTTH (Fiber to the Home) or FTTC (Fiber to the Curb) for ISPs (Internet Service Providers) and FTTB (Fiber to the Building) also for small office network environment of enterprises.

Attention:

Be sure to read this manual carefully before using this product. Especially Legal Disclaimer, Statement of Conditions and Safety Warnings.

Caution:

The NM-1000E is for **indoor** applications only. This product does not have waterproof protection. Do not use in harsh environments (Over temperature range: 0°C ~ 50°C (32°F ~ 122°F)).

Safety Warnings

For your safety, be sure to read and follow all warning notices and instructions before using the device.

- **DO NOT** open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks. ONLY qualified service personnel can service the device. Please contact your vendor for further information.
- **Use ONLY** the dedicated power supply for your device. Connect the power cord or power adapter to the right supply voltage (110V AC used for North America and 230V AC used for Europe).
- **DO NOT** use the device if the power supply is damaged as it might cause electrocution. If the power supply is damaged, remove it from the power outlet. DO NOT attempt to repair the power supply. Contact your local vendor to order a new power supply.
- **Place** connecting cables carefully so that no one will step on them or stumble over them. DO NOT allow anything to rest on the power cord and do not locate the product where anyone can work on the power cord.
- **DO NOT** install nor use your device during a thunderstorm. There may be a remote risk of electric shock from lightning.
- **DO NOT** expose your device to dampness, dust or corrosive liquids.
- **DO NOT** use this product near water, for example, in a wet basement or near a swimming pool.
- **Connect ONLY** suitable accessories to the device. Make sure to connect the cables to the correct ports.
- **DO NOT** obstruct the device ventilation slots, as insufficient airflow may harm your device.
- **DO NOT** place items on the device.
- **DO NOT** use the device for outdoor applications, and make sure all the connections are indoors. There may be a remote risk of electric shock from lightning.
- **Be careful** when unplugging the power, because the transformer may be very hot.
- **Keep** the device and all its parts and accessories out of children's reach.
- **Clean** the device using a soft and dry cloth rather than liquid or atomizers. Power off the equipment before cleansing it.
- This product is **recyclable**. Dispose of it properly.

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Chapter 1. Unpacking Information

1.1 Check List

Carefully unpack the package and check its contents against the check list.

Package Contents:

- 1 x NM-1000E Giga Media Converter
- 1 x AC to DC **(5V)** Power Adapter

Notes:

1. Please inform your dealer immediately for any missing or damaged parts. If possible, retain the carton including the original packing materials. Use them to repack the unit in case there is a need to return for repair.
2. If the product has any issue, please contact your local vendor.
3. Do not use sub-standard power supply. Before connecting the power supply to the device, be sure to check compliance with the specifications. The NM-1000E uses a DC 5V/1A power supply.
4. The power supply included in the package is commercial-grade. Do not use in industrial-grade applications.
5. Please look for the QR code on the bottom of the product, the user can launch the QR code scanning program to scan and download the user's manual electronic format file. Above QR code icon is for reference.

Chapter 2. Hardware Description

This section describes the important parts of the converter. It features the front panel and rear panel.

Figure 2.1 Front Panel

Figure 2.2 Rear Panel

2.1 LED Indicators

The NM-1000E Converter has **Three** LED indicators. The following Table shows the description. (Table 2-1)

Table 2-1 LED Indicators Description and Operation

LEDs	Color	Status	Description
PWR	Green	ON	5V Power is turned on
		OFF	5V Power is turned off
LNK/ACT	Green	ON	Ethernet and Optical Fiber is connected
		Blinking	Optical Fiber is Active
		OFF	Ethernet or Optical Fiber is not connected
FD/COL	Green	ON	Full-Duplex
		Blinking	Collision
		OFF	Half-Duplex

2.2 Application Diagram

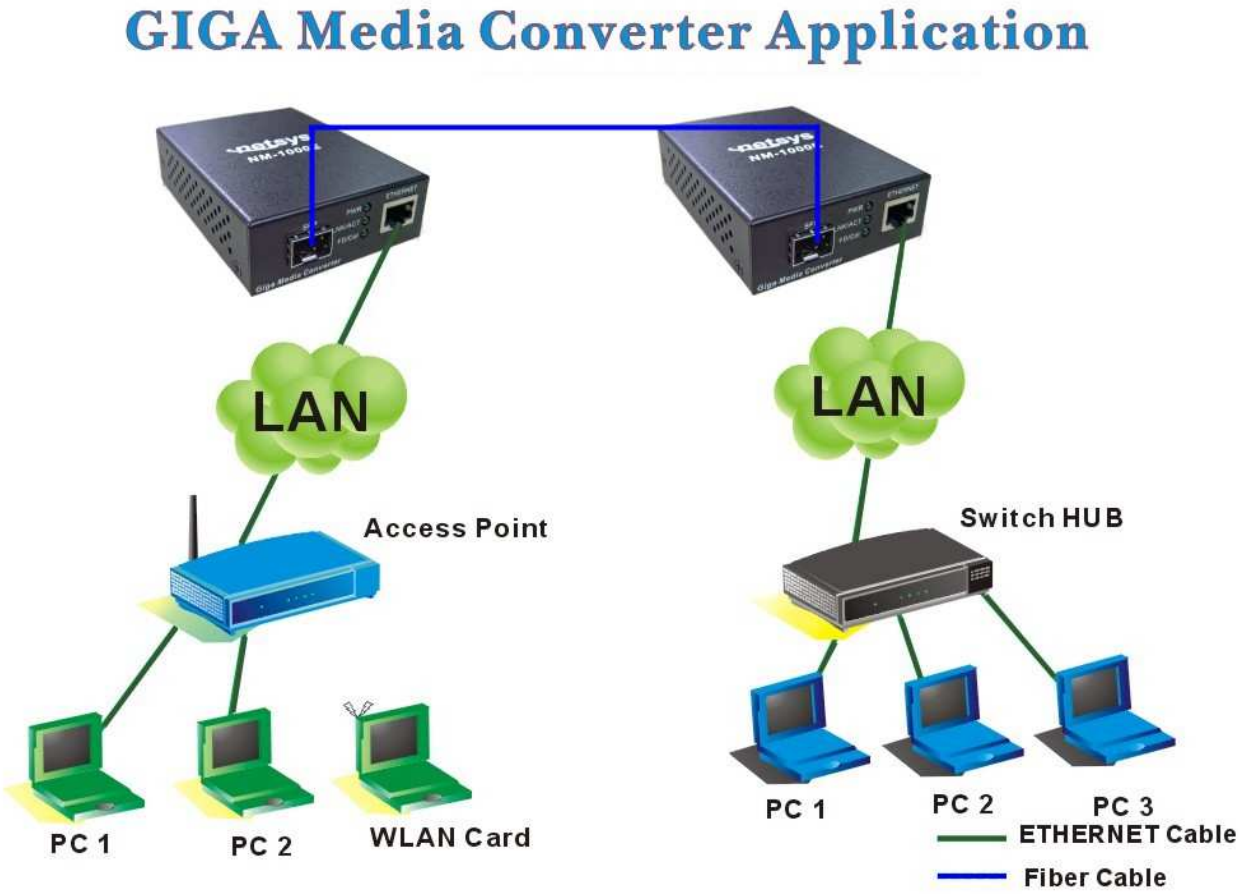

Figure 2.3 Application Diagram

Appendix A: Product Specification

Key Features and Benefits:

- Supports auto-MDIX and 1000Base T for RJ-45 port
- Complies with IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-SX / LX
- Supports all of standard SFP transceiver connecting as multi mode/ single mode/ WDM
- Supports Jumbo frames pass through
- Supports Link Fault Pass Through(LFP)
- Supports Ethernet enable up to 150meters
- Data Transfer Rate: 1000Mbps
- Duplex mode support: Full or half-duplex mode by Auto-Negotiation
- Compact in size and easy installation
- EMC certified by CE and FCC
- RoHS compliant

Specification:

Item	Description
Protocol and Standards:	IEEE802.3ab, IEEE802.3z
Maximum Speed:	Full Duplex: 2000Mbps for 1000Base-TX/FX Half Duplex: 1000Mbps for 1000Base-TX/FX
Cabling:	Ethernet: 1000Base-TX 2pairs Cat.5 UTP Cable Fiber Optic: Flexible (Depending on Fiber Transceiver)
Modes:	Full or half-duplex mode, Auto-Negotiation
Packet Forwarding Rate (64Bytes):	1488000pps@1000Mbps
Interface:	Copper: RJ-45(Auto-MDI / MDI-X) Fiber Optic: SFP type
TX / RX Optical Frequency:	Flexible (Depending on Fiber Transceiver)
LED Indicators:	PWR, LINK / ACT and FD / COL
EMC Compliant:	CE, FCC
Environmental Protection Compliant:	RoHS
Operating Temperature:	0˚C ~ 50˚C (32˚F ~ 122˚F)
Storage Temperature:	-20˚C ~ 70˚C (-4˚F ~ 158˚F)
Humidity:	10 to 90% (non-condensing)
Weight:	About 213.5g
Dimensions:	70mm x 94mm x 26mm
Power Consumption:	1.85W
External Power Adapter:	Input: AC 100~240 volts/50~60Hz Output: DC 5V/1A

Appendix B: Troubleshooting

Diagnosing Giga Media Converter Indicators

The Giga Media Converter can be easily monitored through its comprehensive panel indicators. These indicators assist in identifying problems the Media Converter may encounter. This section describes common problems you may encounter and possible solutions:

1. Symptom:	POWER indicator does not light up (green) after power on.
Cause:	Defective External power supply
Solution:	Check the power plug by plugging in another that is functioning properly. Check the power cord with another device. If these measures fail to resolve the problem, have the unit power supply replaced by a qualified distributor.

2. Symptom:	Link indicator does not light up (green) after making a connection.
Cause:	Network interface (ex. a network adapter card on the attached device), network cable, or switch port is defective.
Solution:	◆ Verify if both of the switch and attached device are powered on. ◆ Be sure the Ethernet cable and fiber optics are plugged into both the switch and corresponding device. ◆ Verify that the proper cable type is used and its length does not exceed specified limits. ◆ Check the Adapter on the attached device and cable connections for possible defects. ◆ Replace the defective Adapter or cable if necessary. ◆ Verify that both Ethernet port and Fiber Optics must be successfully linked at 1000Mbps. If one side link failed, Link LED will not light up.

Appendix C: Compliance and Safety Information

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a computing device, pursuant to Part 15 of FCC class A rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. The equipment and the receiver should be connected to outlets on separate circuits.
4. Consult the dealer or an experienced radio/television technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

If this telephone equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance in order for you to make necessary modifications to maintain uninterrupted service.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Important Safety Instructions

- **Caution:** The direct plug-in wall transformer serves as the main product for disconnecting. The socket outlet shall be installed near the product and be readily accessible.
- **Caution:** Use only the power supply included with this product. In the event the power supply is lost or damaged:In the United States, use only with CSA certified or UL listed Class 2 power supply, rated **5VDC 1A** or above.
  IN Europe, use only with CE certified power supply, rated **5VDC 1A** or above.
- **Do not** use this equipment near water, for example in a wet basement.
- **Avoid** using a telephone during an electrical storm. There may be a remote risk of electrical shock from lightning.
- **Do not** use the telephone to report a gas leak in the vicinity of the leaking area.
- If you experience trouble with this unit, please contact customer service of your dealer immediately.
- **DO NOT DISASSEMBLE THIS EQUIPMENT**. It does not contain any user serviceable components.

FCC Warning

This equipment has been tested to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment can generate, use, and radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at owner's expense.

CE Mark Warning

This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Warranty

The original owner that the product delivered in this package will be free from defects in material and workmanship for one year parts after purchase.

There will be a minimal charge to replace consumable components, such as fuses, power transformers, and mechanical cooling devices. The warranty will not apply to any products which have been subjected to any misuse, neglect or accidental damage, or which contain defects which are in any way attributable to improper installation or to alteration or repairs made or performed by any person not under control of the original owner.

The above warranty is in lieu of any other warranty, whether express, implied, or statutory, including but not limited to any warranty of merchantability, fitness for a particular purpose, or any warranty arising out of any proposal, specification, or sample. We shall not be liable for incidental or consequential damages. We neither assume nor authorize any person to assume for it any other liability.

WARNING:

1.DO NOT TEAR OFF OR REMOVE THE WARRANTY STICKER AS SHOWN, OR THE WARRANTY IS VOID.

2. WARRANTY VOID IF USE COMMERCIAL-GRADE POWER SUPPLY IS USED AT HARSH ENVIRONMENTS.

Chinese SJ/T 11364-2006

部件名称	有 毒 有 害 物 质 或 元 素					
	铅(Pb)	汞(Hg)	镉(Cd)	六价铬[Cr(VI)]	多溴联苯(PBB)	多溴二苯醚(PBDE)
结构壳体	○	○	○	○	○	○
电路组	○	○	○	○	○	○
电源供应器	○	○	○	○	○	○
线材	○	○	○	○	○	○
包装及配件	○	○	○	○	○	○
○：表示该有毒物质在该部件所有均质材料中的含量均在 SJ/T 11364/2006 标准规定的限量要求以下。 ╳：表示该有毒物质至少在该部件的某依均质材料中的含量超出 SJ/T 11364-2006 标准规定的限量要求。						

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